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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,158	10/30/2003	Ralf Zuber	Umicore 0120-US	1631

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EXAMINER	
WILLS, MONIQUE M	

ART UNIT	PAPER NUMBER
1728	

MAIL DATE	DELIVERY MODE
07/18/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/699,158	ZUBER ET AL.	
	Examiner	Art Unit	
	MONIQUE WILLS	1728	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 April 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-7,10 and 12-17* is/are pending in the application.

4a) Of the above claim(s) *12-15* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-7,10,16 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Request for Continued Examination

The request filed on April 11, 2011 for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 10/699,158 is acceptable and a RCE has been established. An action on the RCE follows. The rejection of claims 1-3, 5-8, 9-11 and 16 & 17 under 35 U.S.C. 103(a) as being unpatentable over Nanaumi et al. U.S. Pub. 2003/0049518 in view of Kuroki et al. U.S. Pub. 2007/0196717, is overcome. However, claims 1-3, 5-7, 10, and 16 & 17 are newly rejected as follows:

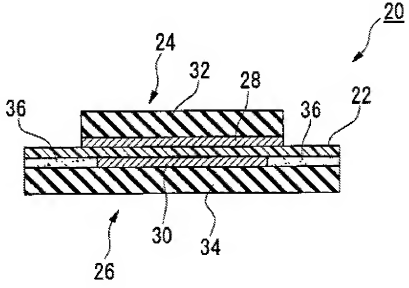
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5-8, 9-11 and 16 & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nanaumi et al. U.S. Pub. 2003/0049518 in view of Brunk et al. U.S. Pat. 7,267,902.

Nanaumi teaches a membrane electrode unit for electrochemical equipment, containing an ionically conductive membrane with a front and back side, a first catalyst layer and a first gas distributor substrate on the front side and a second catalyst layer and a second gas distributor substrate on the back side, in which the first gas distributor substrate has lesser surface dimensions than the ionically conductive membrane and the second gas distributor substrate has essentially the same surface dimensions as the ionically conductive membrane. See paragraph 6.



The catalyst layer on the front side and the catalyst layer on the back side of the ionically conductive membrane have different size dimensions. See paragraph 16. The catalyst layers on the front side and on the back side contain catalyst containing noble metals and optionally ionically conductive materials. See paragraph 48. The gas distributor substrate comprises porous electrically conductive carbon cloth. See paragraph 48. The edge of the first gas distributor substrate and the portion of the front

side of the ionically conductive membrane not supported by the first gas distributor substrate are surrounded by a sealing material. See paragraph 24 and Figure 7. The sealing material is integrally combined with another peripheral plastic frame. See paragraph 24 and Figure 7.

However, the reference does not disclose: edges of the first and second substrate and a portion of the front side of the ionically conductive membrane not supported by the first gas distributor substrate are surrounded by sealing material, wherein the sealing material impregnates the edge regions of the first and second gas distributor substrate to a depth of at least 1mm (**claim 1**); that the catalyst have the same size on both sides of the membrane (**claim 3**); that the membrane has a thickness of 10 to 200 microns (**claim 6**) or that the sealing material impregnates an edge region to a depth of a least 1mm; a polyethylene sealant (**claim 10**).

Brunk teaches that it is conventional to impregnate edges of the gas diffusions layers using a polyethylene sealant. See column 2, lines 47-60 and Example 1.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the seal of Brunk, to impregnate the edges of the gas diffusion layers of Nanaumi, in order to effectively prevent an electrolyte membrane from being broken, can make an assembling step for the fuel cell easy, and achieve an excellent sealing property.

With respect to catalyst size, it would have been obvious to one of ordinary skill in the art at the time the instant invention was employ catalyst of the same size on the same side of the membrane, since such a modification would have involved a mere

change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CC)A 1955). The skilled artisan recognizes that catalyst size directly effects electrochemical activities.

With respect to the thickness of the membrane, it would have been obvious to one of ordinary skill in the art at the time the instant invention was employ a membrane having a thickness of 10 to 200 microns, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CC)A 1955). The skilled artisan recognizes that that thickness of the membrane directly effects ion transport.

With respect to the sealing material impregnating the edge region of the substrate to a depth of 1mm, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the instant sealing depth in order to increase structural integrity of the seal.

Response to Arguments

Applicant's arguments, see page 1, filed April 11, 2011, with respect to sealing the perimeter of the gas diffusion layer, such that the sealing material adheres to the membrane and seals the edge regions of the membrane have been fully considered and are persuasive. The previously pending rejections have been withdrawn. However, Nanaumi et al. U.S. Pub. 2003/0049518 has been reapplied in view of Brunk et al. U.S. Pat. 7,267,902.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Jennifer Michener, may be reached at 571-272-1424. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Monique M Wills/

Examiner, Art Unit 1728

/Jennifer K. Michener/

Supervisory Patent Examiner, Art Unit 1728